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EXAMINER

HOANG, THAI D

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| ART UNIT | PAPER NUMBER |
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2616

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11/15/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

09/275,934

Applicant(s)

JANOSKA ET AL.

Examiner

Thai D. Hoang

Art Unit

2616

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 August 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 and 17-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 15, 17 and 24-28 is/are allowed.
- 6) ☒ Claim(s) 1, 4, 5, 11-14, 18-19 is/are rejected.
- 7) ☒ Claim(s) 2, 3, 6-10 and 20-23 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

According to the certificate of transmission/ mailing submitted on 08/27/2007, the Abandonment filed on 8/30/2007 is withdrawn.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

Claim 18 is rejected under 35 U.S.C. 102(e) as being unpatentable over Sakamoto et al., U.S. patent No. 6,075,767, hereinafter referred to as S767.

Regarding claim 18, S767 discloses a system having a redundant architecture for switchover to a line interface. S767 discloses that the system comprises a switch core (2), wherein the switch core has a plurality of inputs and a plurality of outputs, wherein the switch core passes data received on the plurality of inputs to the plurality of outputs based on routing tags (figs. 1-5, col. 1, lines 13-17; col. 2, lines 19-22; col. 9, lines 8-11; col.13, lines 4-6); and a plurality of line card managers (selector card 3) operably

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coupled to the switch core (2) and adapted to couple to a plurality of line card pairs (1-1 and 1-2), wherein each line card manager includes an arbiter (MPU 28) that couples to a first line card and a second line card of a line card pair, wherein each line card manager couples to a different line card pair, wherein each arbiter is operably coupled to a corresponding input of the plurality of inputs of the switch core, wherein the arbiter provides ingress data from one of the first and second line cards to the corresponding input to the switch core based on selection information (figures 1, 4-5 and 17; col. 7, line 40 - col. 8, line 67.)

Furthermore, S767 discloses each selector card 3 couples to a respective output port of the switch core 2, wherein the data received from the output port of the switch is forwarded to the first line card 1.1 and/or second line card 1.2 based on a routing information of the received data (figures 1, 4-5 and 17). S767 discloses that the first and second line cards (1-1 and 1-2) comprise a routing function (col. 2, lines 20-22 and col. 12, lines 50-55), which provides egress data from the corresponding output to the first and second line cards (1.1 and 1.2) based on routing information included in the egress data (fig. 3, col. 2, lines 23-25).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1, 4, 11-15, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sakamoto et al, U.S patent No. 6,075,767 in view of Sakamoto et al., US patent No. 5,903,544 (cited 04/10/2002), hereinafter referred to as S767 and S544 .

Regarding claim 1, S767 discloses a system having a redundant architecture for switchover to a line interface. S767 discloses that the system comprises a switch core (2), wherein the switch core has a plurality of inputs and a plurality of outputs, wherein the switch core passes data received on the plurality of inputs to the plurality of outputs based on routing tags (figs. 1-5, col. 1, lines 13-17; col. 2, lines 19-22; col. 9, lines 8-11; col.13, lines 4-6); and a plurality of line card managers (selector card 3) operably coupled to the switch core (2) and adapted to couple to a plurality of line card pairs (1-1 and 1-2), wherein each line card manager includes an arbiter (MPU 28) that couples to a first line card and a second line card of a line card pair, wherein each line card manager couples to a different line card pair, wherein each arbiter is operably coupled to a corresponding input of the plurality of inputs of the switch core, wherein the arbiter provides ingress data from one of the first and second line cards to the corresponding input to the switch core based on selection information (figures 1, 4-5 and 17; col. 7, line 40 - col. 8, line 67.)

Furthermore, S767 discloses each selector card 3 couples to a respective output port of the switch core 2, wherein the data received from the output port of the switch is forwarded to the first line card 1.1 and/or second line card 1.2 based on a routing information of the received data (figures 1, 4-5 and 17). S767 does not explicitly disclose that the line card manager (3) includes a router. However, S767 does not

completely disclose a router operably coupled to a corresponding output of the plurality of outputs of the switch core, wherein the router couples to the first line card and the second line card, and wherein the router uses routing information included in the egress data from the corresponding output to determine to which among the following group the egress data is provided: the first line card, the second line card, and both the first and the second line cards. However, S544 discloses a packet handler (see fig. 2), wherein the packet handler comprises a switch 5 (router) coupled to a plurality of paired interfaces 3-i and 3-i', one is used as an active interface, and the other as a standby interface, and a plurality of outputs of the switch core 2-i. The switch 5 distributes the input cells passed through each interface among the plurality of interfaces in accordance with the routing information contained in the cell header, see fig. 2, col. 1, lines 10-18, and 53-67. It would have been obvious to one of ordinary skill in the art at the time the invention was made to adapt the switch in the system disclosed by S544 into S767's system in order to improve routing function in the system.

Regarding claim 4, S767 discloses that the selection information determines an active line card and an inactive line card of the line card pair, wherein the arbiter preferentially passes active line card data over inactive line card data (col. 5, lines 13-25, col. 8, lines 18-33, 41-45, col. 10, lines 57-62.)

Regarding claim 11, the system disclosed by S767 comprises a NxN switch core and the plurality of line cards includes 2N line cards (figures 1-4 and 17.)

Regarding claims 12-14, S767 discloses that the system comprises an ATM switch; therefore, it is used in a cell based network.

2. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over S767 and S544 as shown above, and further in view of Klink, US Patent No. 5,706,277, hereinafter referred to as S767, S544, and Klink respectively.

Regarding claim 5, both S767 and S544 do not disclose the active line card is switched over when idle states are present. However, Klink discloses a system for changing over to a standby link for a transmission device for the bidirectional transmission of digital signals, wherein the reference discloses the standby link 22 is activated based on an idle state in operating link 21 (col. 5, lines 7-18, and col. 6, lines 57-60). It would have been obvious to one of ordinary skill in the art at the time the invention was made to adapt idle states disclosed by Klink into S767's system in order to quickly switch over to redundancy line card for maintaining transmission in the network.

3. Claim 19 is rejected under 35 U.S.C. 102(e) as being unpatentable over Sakamoto et al., U.S patent No. 6,075,767 as shown above, and further in view of Okabe et al., US 6,031,838 A, hereinafter referred to as S767 and Okabe respectively.

Regarding claim 19, S767 does not disclose the system buffering the data received from the first and second line cards prior to selecting the ingress data. However, Okabe discloses ATM switching system, wherein the system comprises cell buffers 31b for buffering the data received from line cards 0-15 before selector 31 selects ingress data, see figure 11. It would have been obvious to one of ordinary skill in the art at the time the invention was made to adapt the buffer disclosed by Okabe into S767's system in order to control data flow in the system.

Allowable Subject Matter

Claims 2-3, 6-10, and 20-23 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 24-28 are allowed for reasons given in the previous office actions.

Claims 15 and 17 are allowed.

Both U.S. patents No. 6,075,767 and No. 5,903,544 assigned to Sakamoto et al do not teach or fairly suggest the following features, which are recited in claim 15:

A switch, comprising:

a switch core, wherein the switch core has a plurality of inputs and a plurality of outputs, wherein the switch core passes data received on the plurality of inputs to the plurality of outputs based on routing tags; and

a plurality of line card managers operably coupled to the switch core, wherein each line card manager includes:

an arbiter that couples to a plurality of line cards, wherein each line card manager couples to a different plurality of line cards, wherein each arbiter is operably coupled to a corresponding portion of the plurality of inputs of the switch core, wherein quantity of line cards to which a line card manager couples is greater than quantity of inputs to which the line card manager is coupled, wherein the arbiter provides ingress data from a line card of the plurality of line cards to which it couples to each input to which it is coupled based on selection information, wherein each line card manager further comprises buffering circuitry

operably coupled to the arbiter, wherein the buffering circuitry buffers ingress data from the plurality of line cards to which the line card manager couples, wherein the arbiter provides ingress data from the buffering circuitry to the switch core based on the selection information; and

a router operably coupled to a corresponding portion of the plurality of outputs of the switch core, wherein the router couples to the plurality of line cards, wherein the router provides egress data from each output of the corresponding portion of the plurality of outputs to at least one of the plurality of line cards coupled to the line manager within which the router is included based on routing information included in the egress data.

Claim 17 is allowed because it depends on allowed claim 15.

Response to Arguments

Applicant's arguments filed 08/27/2007 with respect to claims 1, 4-5, 11-14 and 18-19 have been considered but they are not persuasive.

In the Remarks, pages 14-15, Applicant argued that Sakamoto fails to disclose the step of "using routing information included in the egress data to determine to which among the following group the egress data is provided: the first line card, the second line card, and both the first and the second line cards." Examiner respectfully disagrees. Based on both the specification (page 6) and claim language, the system of the present patent application uses routing information included in the egress data to determine one of three situations:

- (i) the first line card, or

- (ii) the second line card, or
- (iii) both the first and the second line cards.

At fig. 4 and col. 2, lines 19-22, S767 teaches, "An input cell received from a line interface on the active system side is supplied via the selector card 3 to an input port of the ATM switch 2 to be then routed to either one of the output according to the contents of the cell header thereof."

Applicant admitted that the data in the system disclosed by Sakamoto "***routed to either one of the output***" (Remarks, pages 13-15), therefore, Sakamoto disclosed situations (i) and (ii) as interpreted above. Thus, rejections of claims 1 and 18 are proper and maintained.

Regarding claim 11, Applicant argued the references did not disclose the system comprises a NxN switch core and the plurality of line cards includes 2N line cards. Examiner respectfully disagrees. Applicant is directed to figures 1-4 and 17 (Ref. S544), wherein the switch core has N inputs and N outputs, each of them coupled to a working line card and a redundancy line card (2xN).

Regarding claims 12-14, Applicant argued that the ATM switch disclosed by Sakamoto is not for use in a cell based, packet based, and ATM switch. Examiner respectfully disagrees. ATM data cell is considered a data packet that has fixed size (53 bytes).

Regarding claim 5, page 16 of the Remarks, Applicant argued Klink does not disclose limitation recited in claim 5. That is correct. Claim 5 recited "wherein when idle states are present in the active line card data, the arbiter passes inactive line card data."

S767 disclosed a arbiter (MPU 28), switches data from a working line card to a standby line card (col. 2), but S767 does not disclose idle states. Thus the rejection is proper.

Regarding claim 19, In response to applicant's argument that Okabe is nonanalogous art, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, Okabe discloses an ATM switching system that is in the same art area of the Sakamoto. See *KSR International Co. v. Teleflex Inc.*, 550 U.S., 82 USPQ2d 1385, 2007.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thai D. Hoang whose telephone number is (571) 272-3184. The examiner can normally be reached on Monday-Friday 10:00am-6:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Doris To can be reached on (571) 272-31797629. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Thai Hoang/


CHI PHAM
SUPERVISORY PATENT EXAMINER
11/13/07